## REMARKS/ARGUMENTS

Claims 1 through 6 are pending and have been examined. Claims 1 through 6 were rejected under 35 U.S.C. §112, ¶1, as containing subject matter which was not described in the specification. Figures 1-3, 5, 7, 10 and 11were also objected to, because certain numbered elements of these figures were not labeled. Claims 1 through 6 were also rejected under 35 U.S.C. §103(a), as being unpatentable over U.S. Patent No. 6,304,687 ("Inoue") in light of what is well-known to one of ordinary skill in the art.

The Applicant has amended claim 1 to correct errors in English grammar and usage. The Applicant's amendments have not, in any way, narrowed the scope of claim 1. Attached hereto is a marked-up version of the changes made to the claims, captioned "**Version with markings to show changes made**."

In view of these claim amendments, and the remarks set forth below, the Applicant requests reconsideration of the Examiner's rejections.

I. Paragraphs 1 and 2: Rejection under Section 112, First Paragraph

In paragraphs 1 and 2 of the Office Action, claims 1 through 6 were rejected under Section 112, first paragraph. More specifically, the Office Action asserts that, in claim 1, "the phrase 'output slave waveguide' is a new subject matter which is not specified in any part of the specification." Office Action at 2.

The Applicant has amended the phrase "output slave waveguide" in claim 1 to read "output slab waveguide." This amendment corrects an obvious typographical error, and in no way has narrowed the scope of the claim's coverage. As a result of the amendment, the Applicant respectfully asks that the rejection to claim 1 under Section 112, first paragraph, be withdrawn.

II. Paragraph 3: Objection to the Drawings

In paragraph 3 of the Office Action, Figures 1 through 3, 5, 7, 10 and 11 were objected to because certain essential numbered elements in these figures were not labeled. The Applicant has attached corrected drawings, with the corrections noted in red ink. In light of the corrected drawings, the Applicant respectfully asks that the objection to Figures 1 through 3, 5, 7, 10 and 11 be withdrawn.

III. Paragraphs 4 and 5: Rejection Under Section 103(a)

In paragraphs 4 and 5 of the Office Action, claims 1 through 6 were rejected under Section 103(a) over Inoue. The Applicant respectfully traverses this rejection.

Claim 1 recites, among its limitations, the requirement of a material filled in a groove formed in an array of waveguides, said "material having a negative refractive index temperature coefficient; wherein said material disposed in said groove confines light incident to said groove in a ***vertical and a horizontal direction*** thereby preventing the light from spreading in said groove." (Emphasis added.)

Although Inoue discloses "a groove formed in a central portion of the arrayed-waveguide, and a silicone resin . . . inserted into the groove," nowhere in Inoue is it either disclosed or suggested that the material inserted into the groove has the effect of confining light in a vertical and a horizontal direction, as is required by claim 1. Rather, the material inserted into the groove in Inoue is intended merely to make operation of the waveguide temperature independent.

In fact, Inoue's device does not rely on the characteristics of a particular material to confine light. Inoue's device confines light by using optical waveguides fabricated on two sides of the groove. See e.g. Inoue, Figs. 37B and 38B. While Inoue's device prevents light in the groove from spreading in the lateral direction, i.e., the direction horizontal to the

substrate, there is nothing in Inoue that teaches how to confine light in both the vertical and horizontal directions.

The Office Action asserts that it is well-known to one of ordinary skill in the art that when light is confined in a groove, "the light would be confined to prevent loss in all directions including horizontal and vertical directions." However, the Applicant must respectfully disagree with this assertion and requests that the Examiner provide the Applicant with an affidavit under MPEP 2144.03 explaining this position.

For the reasons set forth above, the Applicant respectfully asks that the rejection of claim 1 under Section 103(a) be withdrawn.

Moreover, for the same reasons, the Applicant requests that the rejection of claims 2 through 6 be withdrawn. Claims 2 through 6 are dependent on, and include all the limitations of, claim 1. Since, as was previously argued, the Office Action has failed to establish a *prima facie* case of obviousness with respect to claim 1, the Office Action also fails to establish a case of obviousness with respect to its dependent claims 2 through 6.

IV. Conclusion

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

Dated: January 13, 2003

Respectfully submitted,

By _____

Michael J. Scheer
Registration No.: 34,425
DICKSTEIN SHAPIRO MORIN &
OSHINSKY LLP
1177 Avenue of the Americas
41st Floor
New York, New York 10036-2714
(212) 835-1400
Attorneys for Applicant

**Version With Markings to Show Changes Made**

1. (Amended) A temperature-independent arrayed waveguide grating, comprising [an arrayed waveguide grating composed of one or a plurality of] at least an input waveguide[s], an input slab waveguide including an input side and an output side, said input side of said input slab waveguide receiving light from said input waveguide[s], a plurality of arrayed waveguides including an input side and an output side, said input side of said plurality of arranged waveguides being connected to said output side of said input slab waveguide, an output slab waveguide including an input side and an output side, said input side of said output slab waveguide being connected to said output side of said arrayed waveguides,

a plurality of output waveguides connected to said output side of said output [slave] slab waveguides;

a wedge-shaped groove formed in [a] said arrayed waveguides; and

a material filled in said groove, said material having a negative refractive index temperature coefficient;

wherein [means] said material disposed in said groove [for confining] confines light incident to said groove in a [horizontal direction or in] vertical and a horizontal direction[s and for] thereby preventing the light from spreading in said groove.

FIG. 1

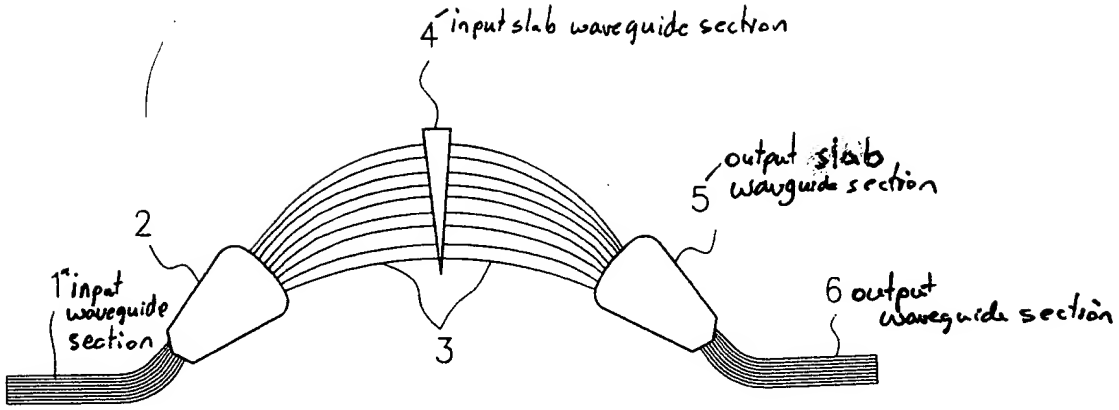

FIG. 2

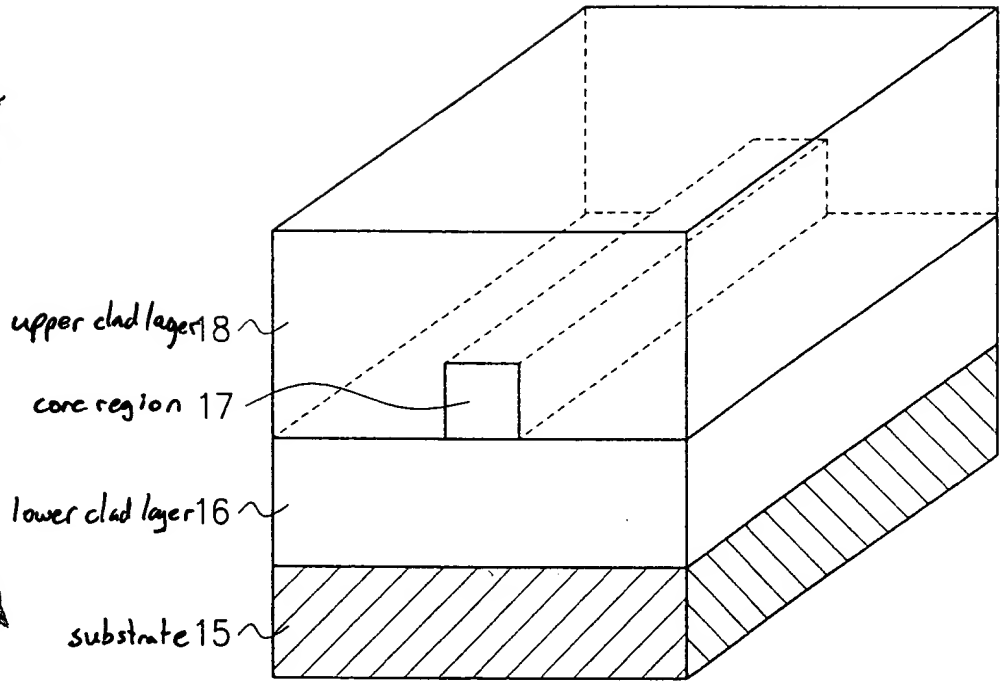

FIG. 3

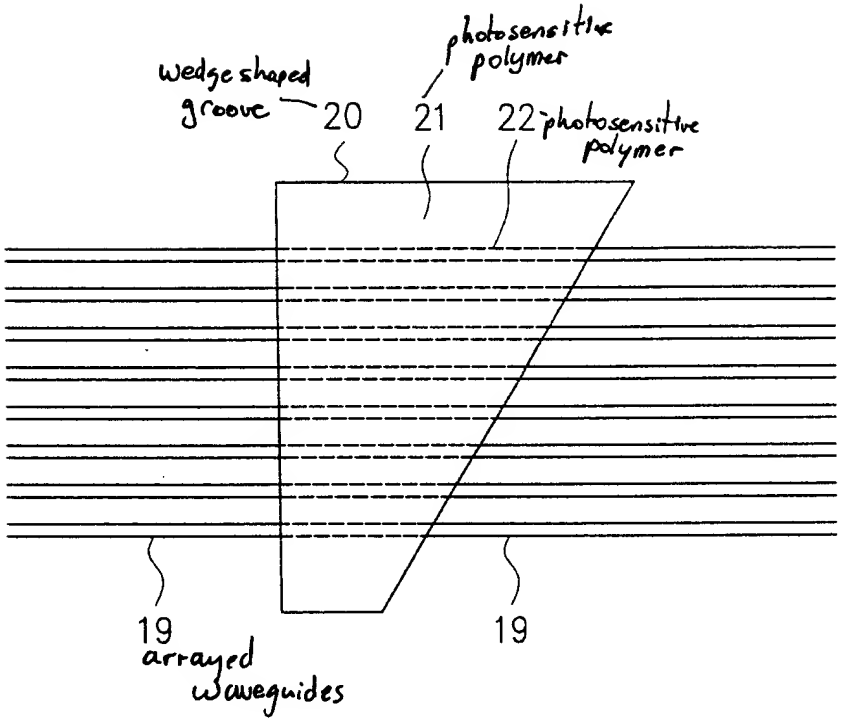

FIG. 5

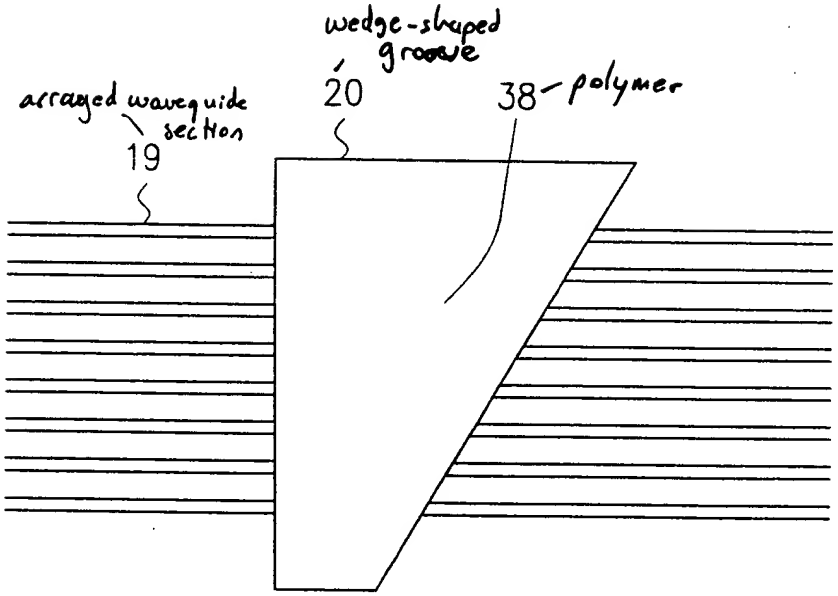

FIG. 7

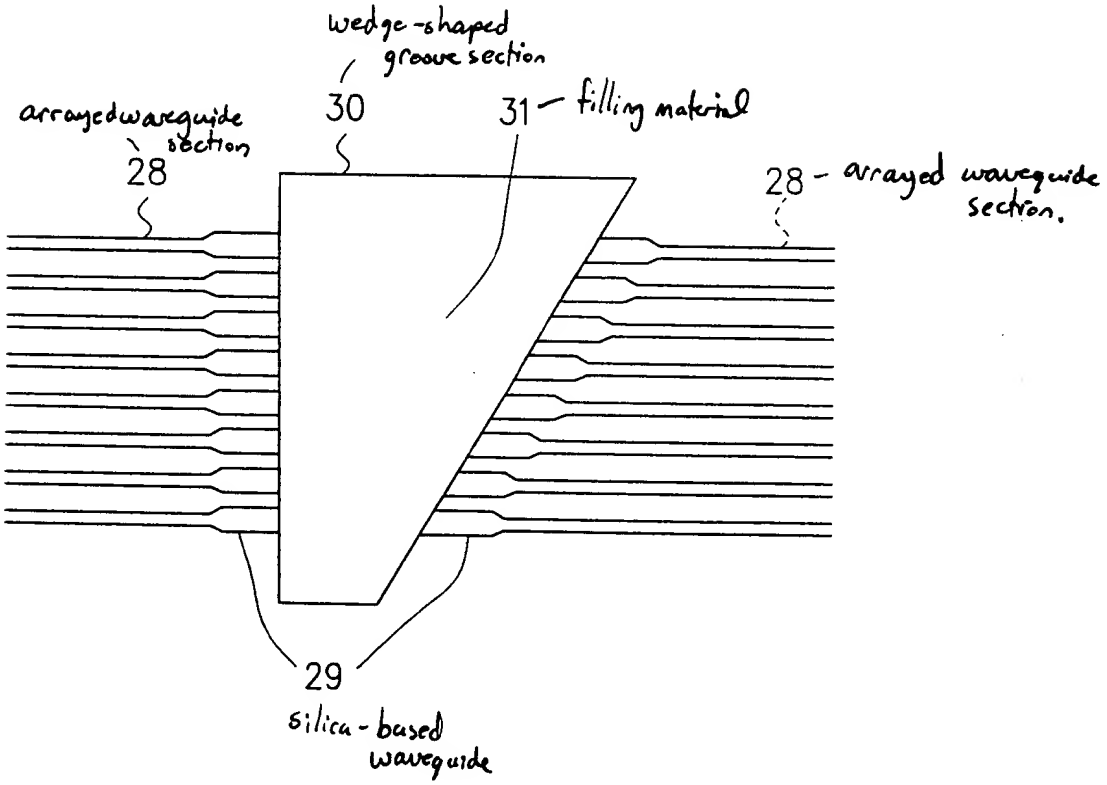

FIG. 10

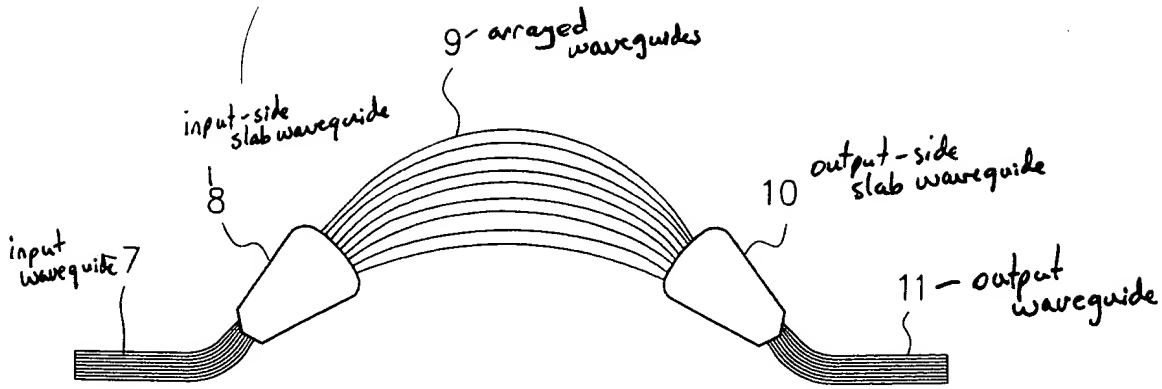

FIG. 11